Appendix G

SUCCESS CRITERIA

VEGETATIVE SUCCESS CRITERIA FOR FORESTED SITES

1. Specific measurable goals for a mitigation site should be based on a comparable forested **reference site** and on baseline measurements taken on the mitigation area before any changes.

2. Based on the reference area and wetland type, a diversity of tree species should be planted with the majority of species eventually producing good food for wildlife. Except for cypress wetlands, a target of 60% heavy seeded trees per acre should be alive at the end of monitoring.

--Use only healthy stock of sufficient size (Root collar diameter 0.25" - 0.75")
--Lift stock and plant trees quickly during dormancy, protecting roots from exposure
--Do not completely re-hydrate the area for 1 - 2 years to allow stock to establish

3. Recommended tree stocking density is a **minimum** of 302 trees per acre (12' x 12') spacing. At this stocking rate, the target survival rate of **planted** species should be:

--Approximately 225 per acre alive and growing at end of 3 growing seasons
--Approximately 150 per acre alive and growing at end of 5 growing seasons
--Approximately 125 per acre alive and growing at end of 7 growing seasons
--Approximately 100 per acre alive and growing at end of 10 growing seasons

4. Volunteer tree species can be counted toward targeted success criteria with the following stipulations:

--Determine and report the ratio of planted versus volunteer species
--Volunteer species can count if they will produce seeds or fruits useful as wildlife food and/or are heavy-seeded species (ex. oaks) **and** coincide with reference site native species. U.S. Fish and Wildlife Service can make recommendations for useful species
--Volunteer species being counted toward success goals must be measured and reported.
--Monitoring period may need to be lengthened to allow counted volunteers to attain the size of planted trees.

5. Growth measurements should be reported on all planted trees and all volunteers being counted toward success in each sample plot. Targets for growth of properly planted stock/volunteers:

--Height - must at least double in height in 3 - 5 years
--Girth - must show substantial increase in diameter over the course of monitoring
--Lateral Branch Growth - must double each 2 years or Crown Diameter must triple in 3 years
--Characterize the trees as: Vigorous, Stressed, Tip Die Back, Basal Sprouts, Dead, or Not Found
--Provide close-up color photographs of trees to prove health of stock

6. Success criteria for palustrine forested mitigation sites should include a fully stocked diverse stand of trees similar to the reference site(s) with no one or two tree species dominating the area

(unless cypress/tupelo wetland). Pine trees do not count toward success. After 4 years, canopy cover and canopy stratification/dominant tree species should be reported.

HYDROLOGIC SUCCESS CRITERIA

Baseline data must be collected on the mitigation area(s) and suitable reference areas for a minimum of one growing season. These are used to quantify the degree of hydrological impairment, predict potential hydrologic improvement and select an appropriate Net Improvement factor. The hydrological success criteria must document how the mitigation site will match the degree, duration and periodicity of saturation/inundation of the reference site within 15% for all three parameters. Daily or continuous hydrologic monitoring is required for this documentation. Modeling data may be proposed in-lieu-of collecting baseline data; however, definitive, measurable hydrological success criteria are required (e.g. increase the period of saturation from 30 days/year to 90 days/year to match the modeled conditions of a reference site). All sites must, at a minimum, meet the hydrologic criteria contained in the US Army Corps of Engineers 1987 Wetland Delineation Manual; however, meeting this minimum will not be considered as a success criteria.

- A narrative discussion of the key elements of the proposed monitoring and contingencies plan.
- Names of party(s) responsible for the monitoring and contingencies plan.
- A description of the baseline conditions (e.g., soils, hydrology, vegetation, and wildlife).
- A schedule for monitoring activities and reporting.
- A listing of measurable success factors with quantifiable criteria for determining success.
- Definitions for success factors and other terms used in the plan.
- Descriptions of equipment, materials, and methods to be used.
- Proposed protective measures (e.g., restrictive covenants or conservation easements).
- Vegetation monitoring and contingency plan.
- Hydrological monitoring and contingency plan.
- Designation of reference site.

For stream mitigation, monitoring of physical parameters.

Subwatershed Management Category	Suggested Indicators
Sensitive Stream	• Single species biomonitoring (e.g., salmon, trout) • Aquatic habitat and the stream geometry
Impacted Stream	• Aquatic habitat and stream geometry • Biological indicators such as macroinvertebrate and fish populations

Non-Supporting Stream	• Single species biomonitoring • Selected chemical constituents such as metals, hydrocarbons, and other toxins • Trash and debris surveys
Restorable Stream	• Aquatic habitat and stream geometry • Biological indicators such as macroinvertebrate and fish populations • Trash and debris surveys